REMARKS

The Examiner is respectfully requested to reconsider and withdraw the outstanding rejections based on the following remarks.

Claims 1-3, 5, 7-11, 13, 15-18, 20, 22-27 and 29-33 were rejected under 35 U.S.C. §102(e) in view of U.S. Patent No. 6,325,492 to *Koitabashi et al.* Claims 6, 14, 21 and 28 were indicated to be allowable but for their dependance from rejected claims.

Koitabashi et al. discloses an ink jet printing apparatus employing an ink-jet head having a plurality of ejection openings 2N, which function as nozzles. A plurality of heaters corresponds to each ink ejection opening. See Figure 4. The multiple heaters make it possible for one ejection opening to eject different amounts of ink during subsequent ejections. *Koitabashi et al.* discloses doing such in a multi-value printing mode. However, a multi-value printing mode switches between large, medium and small ejection amount modes depending upon the density data of each pixel. See Column 26 lines 26-28. Figure 44 shows a multi-value printing mode where the ejecting amount is switched between the large, medium and small ejection amount modes depending on the multi-value data for each ejection opening.

Koitabashi et al. also discloses a smoothing mode. *Koitabashi et al.* discloses that during smoothing, some ejection openings eject large printing ink droplets, and other different ejection openings eject small smoothing ink droplets. See column 25, lines 46-55. In *Koitabashi et al.*, unlike multi-value printing mode, the smoothing mode does not eject different size ink droplets from the same nozzle.

Applicants have amended independent claim 1 to more explicitly claim a smoothing process wherein the smaller dot and the image forming dot are ejected from a single nozzle.

Claim 1 defines an ink jet printer ejecting a plurality of kinds of ink droplets of different sizes from a single nozzle, the printer including a smoother for performing a smoothing process using a dot smaller than a dot forming the image wherein the smaller dot and the image forming dot are ejected from the single nozzle, and a controller for controlling the smoother to print a center of the smaller size dot close to a center of the image forming dot at a distance smaller than the pitch of the image forming dots.

The Examiner alleges that in column 27, lines 5-7; column 25, line 45 to column 26, line 17; and Figure 43, *Koitabashi et al.* discloses the invention of claim 1. However, *Koitabashi et al.* only discloses varying the ejection amount of a single nozzle for printing in multi-value print modes, not smoothing.

In column 27, lines 6-9 *Koitabashi et al.* discloses that "it is possible to set the ejection amounts at smaller value in respective of the ejection amount modes and to adjust the ejection amounts in respective ejection amount modes by means for varying the ink-jet temperature." However, in column 27, lines 11-13 *Koitabashi et al.* only discloses that "[a]mong various printing modes, is it possible to vary the ejection amount mode during printing for one line, such as that in the multi-value printing mode." Also, the multi-value printing mode disclosed in Figure 44 and column 26, lines 26-28 is not a smoothing mode, but rather "a mode to switch the ejection amount mode between large, medium and small ejection amount modes depending upon density data of each pixel."

Thus, *Koitabashi et al.* discloses that it is possible to vary the ejection amount during successive ejections in various printing modes. But, in *Koitabashi et al.*, in the smoothing mode smaller ink droplets and larger ink droplets are ejected from different openings. At column 25, lines 51-55, *Koitabashi et al.* specifically discloses that, "upon performing smoothing, it is desirable to make the dots to be formed in the smoothing mode by reducing the ejection amount to be ejected through the additional ejection openings than that set for the ejection openings to perform printing."

In summary, *Koitabashi et al.* not only fails to disclose varying the ejection amounts from a single nozzle during smoothing, but also clearly discloses that during smoothing the smaller ejection amount and the larger ejection amount only eject from different openings, thus teaching away from the claimed invention.

With respect to claim 9, the Examiner alleges that Figure 43 of *Koitabashi et al.* discloses a printer comprising an ink jet head ejecting a plurality of kinds of ink droplets of different sizes from a single nozzle, and a controller for changing a distance between the centers of adjacent dots thereby to change the printing position of the dot based on the size of the dot in printing said plurality of kinds of dots.

Applicants respectfully assert that Figure 43 fails to disclose an ink jet head ejecting a plurality of kinds of ink droplets of different sizes from a single nozzle. As Figure 43 merely illustrates dots of different size, there is no suggestion that the dots were created by a single nozzle. Also, there is no evidence of such present in the specification as, referring to smoothing, column 25, lines 53-55 of *Koitabashi et al.* disclose "reducing the ejection amount to be ejected through the additional ejection openings than that set for the ejection

openings to perform printing." Also, in column 25, lines 47-50 *Koitabashi et al.* discloses performing "smoothing by employing the ejection openings other than the ejection openings used for printing in 360 DPI or 240 DPI, with respect to the dot data of 360 DPI or 240 DPI." Thus, at best Figure 43 discloses ejecting different size ink droplets from different nozzles, not different size ink droplets from a single nozzle.

Also, Figure 43 clearly fails to disclose a controller for changing a distance between the centers of adjacent dots thereby to change the printing position of the dot based on the size of the dot in printing said plurality of kinds of dots. Figure 43 merely shows dots of different sizes and positions, and does not disclose that a controller changes the distances between the centers of the adjacent dots based on the size of the dots. Further, in contrast to the Examiner's interpretation of Figure 43, the specification specifically discloses in column 26, lines 9-12 that "the interpolating dot data is determined depending upon presence and absence of the original dot data in the vertical and lateral directions and diagonal directions." Thus, *Koitabashi et al.* discloses positioning the dot based on the presence or absence of original dot data and not based on the size of the dot in the printing.

With respect to claim 17, the Examiner alleges that Figure 43 of *Koitabashi et al.* discloses a method of controlling printing in an inkjet printer which ejects a plurality of kinds of ink droplets of different sizes from a single nozzle, and determines whether or not control of the printing position of a dot is necessary in controlling the timing of printing the dot if it is determined necessary.

As noted above, Figure 43 fails to disclose ejecting ink droplets of different sizes from a single nozzle and for at least that reason cannot anticipate the invention of claim 17.

However, even if Figure 43 somehow discloses such, it fails to disclose the step of determining whether or not control of the printing position of a dot is necessary and controlling the timing of printing the dot if it is determined necessary. The Examiner specifically references Figure 46b of *Koitabashi et al.* to disclose this feature. However, referring to Figure 46b, column 27, lines 60-61 discloses setting "the timing for the large ejection amount mode by the initial setting." Thus, Figure 46 discloses initially setting the timing of the printing and the ejection size, not determining if controlling the position of the dot and timing is necessary. Thus, Figures 43 and 46b cannot disclose the invention of claim 17.

With respect to claims 24, 30, and 31, the Examiner relies on Figure 43 of *Koitabashi et al.* to disclose a smoother for smoothing the image by arranging the smoothing dots around edges of the image forming dots, wherein, on each scanning line, a distance between a center of at least one of the smoothing dots and a center of one of the image forming dots adjacent to said one smoothing dot is shorter than a distance between the centers of adjacent image forming dots.

However, as noted above, in column 25, lines 47-49, *Koitabashi et al.* discloses that Figure 43 is a diagrammatic illustration showing "a mode to perform smoothing by employing the ejection openings other than the ejection openings used for printing in 360 DPI or 240 DPI, with respect to the dot data of 360 DPI or 240 DPI." Thus, Figure 43 only discloses ejecting same size ink droplets from a single nozzle, rather than ejecting ink droplets of different sizes from a single nozzle. Therefore, Figure 43 cannot disclose the claimed invention of claim 24, 30 or 31.

For at least the reasons stated above, claims 1, 9, 17, 24, 30, and 31 are allowable, and at least by their virtue of being dependent upon allowable claims, dependent claims 2-3, 5-8, 10-11, 13-16, 20-23, 25-29, and 32-33, are also allowable. Thus, Applicants respectfully request that the rejections be withdrawn in a timely fashion

In the event that there are any questions concerning this response, or the application in general, the Examiner is respectfully urged to telephone the undersigned attorney so that prosecution of the application may be expedited.

Respectfully submitted,

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